

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/845,064

DATE: 05/11/2001
TIME: 15:30:51

ENTERED

Input Set : A:\Mjf0410.txt
Output Set: N:\CRF3\05112001\I845064.raw

3 <110> APPLICANT: MERISTEM THERAPEUTICS
5 <120> TITLE OF INVENTION: CLEAN SYNTHETIC VECTORS, PLASMIDS, TRANSGENIC PLANTS
6 AND PLANT PARTS CONTAINING SAID VECTORS, AND THEIR
7 METHODS OF PRODUCTION
9 <130> FILE REFERENCE: SynVec1
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/845,064
C--> 12 <141> CURRENT FILING DATE: 2001-04-27
14 <160> NUMBER OF SEQ ID NOS: 57
16 <170> SOFTWARE: PatentIn Ver. 2.1
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 3508
20 <212> TYPE: DNA
21 <213> ORGANISM: Artificial Sequence
23 <220> FEATURE:
24 <223> OTHER INFORMATION: Description of Artificial Sequence: Plasmid
25 pMRT1105
27 <220> FEATURE:
28 <221> NAME/KEY: rep_origin
29 <222> LOCATION: (1)..(654)
30 <223> OTHER INFORMATION: Origin of replication ori RK2
32 <220> FEATURE:
33 <221> NAME/KEY: gene
34 <222> LOCATION: (655)..(2013)
35 <223> OTHER INFORMATION: NPT III gene coding for neomycin
36 phosphotransferase and kanamycin resistance
38 <220> FEATURE:
39 <221> NAME/KEY: misc_feature
40 <222> LOCATION: (2014)..(3508)
41 <223> OTHER INFORMATION: TrfA locus from pRK2 coding for two proteins P285
42 and P382 enabling an increase in the replication
43 rate
45 <400> SEQUENCE: 1
46 ccgggctggt tgccctcgcc gctgggctgg cggccgtcta tggccctgca aacgcgccag 60
47 aaacgccgtc gaagccgtgt gcgagacacc gcggccgccg gcgttgtgga tacctcgcg 120
48 aaaacttgcc cctcactgac agatgagggg cggacgttga cacttgaggg gccgactcac 180
49 ccggcgcgcc gttgacagat gaggggcagg ctcgatttgc gccggcgacg tggagctggc 240
50 cagcctcgca aatcggcgaa aacgcctgat ttacgcgag tttccacag atgatgtgga 300
51 caagcctggg gataagtgcc ctgcggtatt gacacttgag ggcgcgact actgacagat 360
52 gaggggcgcg atccttgaca cttgaggggc agagtgtgta cagatgaggg gcgcacctat 420
53 tgacatttga ggggctgtcc acaggcagaa aatccagcat ttgcaagggt ttccgcccgt 480
54 ttttcggcca ccgctaacct gtcttttaac ctgcttttaa accaatattt ataaaccttg 540
55 tttttaacca gggctgcgcc ctgtgcgcgt gaccgcgcac gccgaagggg ggtgcccccc 600
56 cttctcgaa cctcccggaa aggccttcta ccataatccg cgataaaccc agcgaacct 660
57 ttgaggtgat aggtaagatt ataccgaggt atgaaaacga gaattggacc ttacagaat 720
58 tactctatga agcgcctat ttaaaaagct accaagacga agaggatgaa gaggatgagg 780
59 aggcagattg ccttgaatat attgacaata ctgataagat aatacatctt ttatatagaa 840
60 gatatcgccg tatgtaagga tttcaggggg caaggcatag gcagcgcgct tatcaatata 900

RAW SEQUENCE LISTING

DATE: 05/11/2001

PATENT APPLICATION: US/09/845,064

TIME: 15:30:51

Input Set : A:\Mjf0410.txt

Output Set: N:\CRF3\05112001\I845064.raw

```

61 tctatagaat gggcaaagca taaaaacttg catggactaa tgcttgaac ccaggacaat 960
62 aaccttatag cttgtaaat ctaccaaact tgtggtttca aaatcggctc cgtcgatact 1020
63 atgttatacg ccaactttga aaacaacttt gaaaaagctg ttttctggta ttttaaggttt 1080
64 tagaatgcaa ggaacagtga attggagttc gtcttggtat aattagcttc ttgggggtatc 1140
65 tttaaatact gtagaaaaga ggaaggaaat aataaatggc taaaatgaga atatcaccgg 1200
66 aattgaaaaa actgatcgaa aaataccgct gcgtaaaaga tacggaagga atgtctcctg 1260
67 ctaagggtata taagctggtg ggagaaaatg aaaacctata tttaaaaatg acggacagcc 1320
68 ggtataaagg gaccacctat gatgtggaac gggaaaagga catgatgcta tggctggaag 1380
69 gaaagctgcc tgttccaaag gtcctgcaact ttgaacggca tgatggctgg agcaatctgc 1440
70 tcatgagtga ggccgatggc gtcctttgct cggaagagta tgaagatgaa caaagccctg 1500
71 aaaagattat cgagctgtat gcggagtgc tcaaggctct tcaactccatc gacatatcgg 1560
72 attgtcccta tacgaatagc ttagacagcc gcttagccga attggattac ttactgaata 1620
73 acgatctggc cgatgtggat tgcgaaaact gggagaaga cactccattt aaagatccgc 1680
74 gcgagctgta tgatttttta aagacggaaa agcccgaaga ggaacttgct ttttcccacg 1740
75 gcgaacctgg agacagcaac atctttgtga aagatggcaa agtaagtggc tttattgata 1800
76 ttgggagaag cggcagggcg gacaagtgg atgacattgc cttctcgctc cggctcgatca 1860
77 gggaggatat cggggaagaa cagtatgtcg agctattttt tgacttactg gggatcaagc 1920
78 ctgattggga gaaaataaaa tattatatct tactggatga attgttttag tacctagatg 1980
79 tggcgcaacg atgccggcga caagcaggag cgcaccgact tcttccgcat caagtgtttt 2040
80 ggctctcagg ccgaggccca cggcaagtat ttgggcaagg ggtcgtgggt attcgtgcag 2100
81 ggcaagattc ggaataccaa gtacgagaag gacggccaga cggctacgg gaccgacttc 2160
82 attgcccata aggtggatta tctggacacc agcgggcaaa tcaggaataa 2220
83 gggcacattg ccccggcgtg agtcggggcg atcccgcga gagggtgaat gaatcggacg 2280
84 ttgaccgga aggcatacag gcaagaactg atcgacgcgg ggttttccgc cgaggatgcc 2340
85 gaaaccatcg caagccgcac cgtcatgctg gcgcccgcg aaaccttcca gtcctcgcc 2400
86 tcgatggtcc agcaagctac ggccaagatc gagcgcgaca gcgtgcaact ggctccccct 2460
87 gccctgcccg cgccatcggc cgccgtggag cgttcgcgct gtctcgaaca ggaggcggca 2520
88 ggtttggcga agtcgatgac catcgacacg cgaggaaacta tgacgacca gaagcgaaaa 2580
89 accgcccggc aggacctggc aaaacaggtc agcaggccca agcaggccgc gttgctgaaa 2640
90 caccagaagc gagcagatca gaaaatgcag ctttccttgt tcgatattgc gccgtggccg 2700
91 gacacgatgc gagcagatgc aaacgacacg gcccgctctg ccctgttcac cacgcgcaac 2760
92 aagaaaatcc cgcgcgaggc gctgcaaaac aaggtcattt tccacgtcaa caaggacgtg 2820
93 aagatcacct acaccggcgt cgagctgcgg gccgacgat acgaactggt gtggcagcag 2880
94 gtgttggaat acgcaagcgc caccctatc ggcgagccga tcaccttcac gttctacgag 2940
95 ctttgccagg acctgggctg gtcgatcaat ggccggtatt acacgaaggg cgaggaatgc 3000
96 ctgtcgcgcc tacaggcgac ggcgatgggc ttcacgtccg accgcgttgg gcacctggaa 3060
97 tcggtgtcgc tgcgtcaccg cttccgcgtc ctggaccgtg gcaagaaaac gtcccgttgc 3120
98 cagggtcctga tcgacgagga aatcgctcgt ctgtttgctg gcgaccacta cacgaaattc 3180
99 atatgggaga agtaccgcaa gctgtcgcgg acggcccgac ggatgttcga ctatttcagc 3240
100 tcgaccggg agccgtaccc gctcaagctg gaaaccttcc gcctcatgtg cggatcggat 3300
101 tccaccgcgc tgaagaagtg gcgcgagcag gtcggcgaag cctgcgaaga gttgcgaggc 3360
102 agcggccttg tggaacacgc ctgggtcaat gatgacctgg tgcatgcaa acgctagggc 3420
103 cttgtggggt cagttccggc tgggggttca gcagccagcg ctttactggc atttcctagg 3480
104 aaaagaccga gcgcctttgc gacgctca 3508
107 <210> SEQ ID NO: 2
108 <211> LENGTH: 4098
109 <212> TYPE: DNA
110 <213> ORGANISM: Artificial Sequence
112 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 05/11/2001

PATENT APPLICATION: US/09/845,064

TIME: 15:30:51

Input Set : A:\Mjf0410.txt

Output Set: N:\CRF3\05112001\I845064.raw

```

113 <223> OTHER INFORMATION: Description of Artificial Sequence:Plasmid
114     pMRT1106
116 <220> FEATURE:
117 <221> NAME/KEY: rep_origin
118 <222> LOCATION: (1)..(654)
119 <223> OTHER INFORMATION: Origin of replication ori RK2
121 <220> FEATURE:
122 <221> NAME/KEY: rep_origin
123 <222> LOCATION: (655)..(1263)
124 <223> OTHER INFORMATION: Origin of replication ori ColEI
126 <220> FEATURE:
127 <221> NAME/KEY: gene
128 <222> LOCATION: (1264)..(2603)
129 <223> OTHER INFORMATION: NPT III gene coding for neomycin
130     phosphotransferase and kanamycin resistance
132 <220> FEATURE:
133 <221> NAME/KEY: misc_feature
134 <222> LOCATION: (2604)..(4098)
135 <223> OTHER INFORMATION: TrfA locus from RK2 coding for two proteins P285
136     and P382 enabling the increase of the rate of
137     replication
139 <400> SEQUENCE: 2
140 ccgggctggt tgccctcgcc gctgggctgg cggccgtcta tggccctgca aacgcgccag 60
141 aaacgccgtc gaagccgtgt gcgagacacc gcggccgccg gcgttggtga tacctcgccg 120
142 aaaacttgcc cctcactgac agatgagggg cggacgttga cacttgaggg gccgactcac 180
143 ccggcgcggc gttgacagat gaggggcagg ctcgatttcg gccggcgacg tggagctggc 240
144 cagcctcgca aatcggcgaa aacgcctgat ttacgcgag tttccacag atgatgtgga 300
145 caagcctggg gataagtgcc ctgcggtatt gacacttgag gggcgcgact actgacagat 360
146 gaggggcgcg atccttgaca cttgaggggc agagtgtgta cagatgaggg gcgcacctat 420
147 tgacatttga ggggctgtcc acaggcagaa aatccagcat ttgcaagggt ttccgcccgt 480
148 ttttcggcca ccgctaacct gtcttttaac ctgcttttaa accaatattt ataaaccttg 540
149 tttttaacca gggctgcgcc ctgtgcgcgt gaccgcgcac gccgaagggg ggtgcccccc 600
150 cttctcgaac cctcccgaa aggtatgcgg tgtgaaatac cgcacagatg cgtaaggaga 660
151 aaataccgca tcaggcgctc ttccgcttcc tcgctcactg actcgtctcg ctcggtcggt 720
152 cggctgcggc gagcggtatc agctcactca aaggcggtaa tacggttatc cacagaatca 780
153 ggggataacg caggaaagaa catgtgagca aaaggccagc aaaaggccag gaaccgtaaa 840
154 aaggccgcgt tgctggcggt tttccatagg ctccgcccc ctgacgagca tcacaaaaat 900
155 cgacgctcaa gtcagaggtg gcgaaaccgc acaggactat aaagatacca ggcgtttccc 960
156 cctggaagct cctcgtgctg ctctcctgtt ccgaccctgc cgcttaccgg atacctgtcc 1020
157 gcctttctcc cttegggaag cgtggcgctt tctcatagct cacgctgtag gtatctcagt 1080
158 tcggtgtagg tcgttcgctc caagctgggc tgtgtgcacg aacccccctg tcagcccgac 1140
159 cgctgcgcct tatccggtaa ctatcgtctt gagtccaacc cggtaaagaca cgacttatcg 1200
160 ccaactggcag cagccttcta ccataatccg cgataaacc agcgaaccat ttgaggtgat 1260
161 aggtaaagatt ataccgaggt atgaaaacga gaattggacc ttacagaat tactctatga 1320
162 agcgccatat ttaaaaagct accaagacga agaggatgaa gaggatgagg aggcagattg 1380
163 ccttgaatat attgacaata ctgataagat aatacatctt ttatatagaa gatatcgccg 1440
164 tatgtaagga tttcaggggg caaggcatag gcagcgcgct tatcaatata tctatagaat 1500
165 gggcaaagca taaaaacttg catggactaa tgcttgaaac ccaggacaat aaccttatag 1560
166 cttgtaaatt ctacaaaaat tgtgtgttca aaatcgctc cgtcgatact atgttatatg 1620

```

RAW SEQUENCE LISTING

DATE: 05/11/2001

PATENT APPLICATION: US/09/845,064

TIME: 15:30:51

Input Set : A:\Mjf0410.txt

Output Set: N:\CRF3\05112001\I845064.raw

```

167 ccaacttttga aaacaacttt gaaaaagctg ttttctggta ttttaaggttt tagaatgcaa 1680
168 ggaacagtga attggagttc gtcttgttat aattagcttc ttggggatc tttaaatact 1740
169 gtagaaaaga ggaaggaaat aataaatggc taaaatgaga atatcaccgg aattgaaaaa 1800
170 actgatacga aaataccgct gcgtaaaaga tacggaagga atgtctcctg ctaagggtata 1860
171 taagctgggt ggagaaaatg aaaacctata tttaaaaatg acggacagcc ggtataaaagg 1920
172 gaccacctat gatgtggaac gggaaaagga catgatgcta tggctggaag gaaagctgcc 1980
173 tggtccaaag gtccctgcat ttgaacggca tgatggctgg agcaatctgc tcatgagtga 2040
174 ggccgatggc gtcctttgct cggaagagta tgaagatgaa caaagccctg aaaagattat 2100
175 cgagctgtat gcggagtgc tcaaggctct tcactccatc gacatatcgg attgtcccta 2160
176 tacgaatagc ttagacagcc gcttagccga attggattac ttactgaata acgatctggc 2220
177 cgatgtggat tgcgaaaact gggaagaaga cactccattt aaagatccgc gcgagctgta 2280
178 tgatttttta aagacggaaa agcccgaaga ggaactgtc tttccacg gcgacctggg 2340
179 agacagcaac atctttgtga aagatggcaa agtaagtggc tttattgatc ttgggagaag 2400
180 cggcagggcg gacaagtgg atgacattgc cttctgcgtc cggctgatca gggaggatat 2460
181 cggggaagaa cagtatgtcg agctattttt tgacttactg gggatcaagc ctgattggga 2520
182 gaaaataaaa tattatattt tactggatga attgttttag tacttagatg tggcgcaacg 2580
183 atgccggcga caagcaggag cgcaccgact tctccgcgt caagtgtttt ggctctcagg 2640
184 ccgaggccca cggcaagtat ttgggcaagg ggtcgtgggt attcgtgcag ggcaagattc 2700
185 ggaataccaa gtacgagaag gacggccaga cggctacgg gaccgacttc attgccgata 2760
186 aggtggatta tctggacacc aaggcaccag gcgggtcaaa tcaggaataa gggcacattg 2820
187 ccccggcgtg agtcggggca atcccgaag gaggtgaat gaatcggacg tttgaccgga 2880
188 aggcatacag gcaagaactg atcgacgcgg ggttttccgc cgaggatgcc gaaaccatcg 2940
189 caagccgcac cgtcatgctg gcgcccgcg aaaccttcca gtccgtcggc tcgatgggcc 3000
190 agcaagctac ggccaagatc gagcgcgaca gcgtgcaact ggctccccct gccctgcccg 3060
191 cgccatcggc cgccgtggag cgttcgcgtc gtctcgaaca ggaggcggca ggtttggcga 3120
192 agtcgatgac catcgacacg cgaggaacta tgacgacca gaagcgaaaa accgccggcg 3180
193 aggacctggc aaaacaggtc agcgaggcca agcaggccgc gttgctgaaa cacacgaagc 3240
194 agcagatcaa ggaaatgcag ctttccctgt tcgatattgc gccgtggccg gacaogatgc 3300
195 gagcgatgcc aaacgacacg gcccgctctg cctgtttcac cacgcgcaac aagaaaatcc 3360
196 gcgcgagagg gctgcaaaac aaggtcattt tccacgtcaa caaggacgtg aagatcacct 3420
197 acaccggcgt cgagctgcgg gccgacgatg acgaactggg gtggcagcag gtgttgaggt 3480
198 acgcgaagcg caccctatc ggcgagccga tcaccttoac gttctacgag ctttgccagg 3540
199 acctgggctg gtcatcaat ggccggtatt acacgaaggc cgaggaatgc ctgtcgcgcc 3600
200 tacaggcgac ggcatgggc ttacgctcg accgcgttg gcacctgaa tcggtgtcgc 3660
201 tgctgcaccg cttccgcgtc ctggaccgtg gcaagaaaac gtcccgttgc caggtcctga 3720
202 tcgacgagga aatcgctcgt ctgtttgctg gcgaccacta cacgaaattc atatgggaga 3780
203 agtaccgcaa gctgtcgcg acggcccgcg ggatgttoga ctatttcagc tcgcaccggg 3840
204 agccgtacct gctcaagctg gaaaccttc gcctcatgtg cggatcggat tccacccgcg 3900
205 tgaagaagtg gcgcgagcag gtcggcgaag cctgcgaaga gttgcgaggc agcggcctgg 3960
206 tggaacacgc ctgggtcaat gatgacctg tgcatgcaa acgctagggc cttgtggggg 4020
207 cagttccggc tgggggttca gcagccagcg ctttactggc atttctagg aaaagaccga 4080
208 gcgcctttgc gacgtca 4098
211 <210> SEQ ID NO: 3
212 <211> LENGTH: 5971
213 <212> TYPE: DNA
214 <213> ORGANISM: Artificial Sequence
216 <220> FEATURE:
217 <223> OTHER INFORMATION: Description of Artificial Sequence:Plasmid
218 pMRT1118

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/845,064

DATE: 05/11/2001

TIME: 15:30:51

Input Set : A:\Mjf0410.txt

Output Set: N:\CRF3\05112001\I845064.raw

```

220 <220> FEATURE:
221 <221> NAME/KEY: rep_origin
222 <222> LOCATION: (1)..(654)
223 <223> OTHER INFORMATION: Origin of replication ori RK2
225 <220> FEATURE:
226 <221> NAME/KEY: rep_origin
227 <222> LOCATION: (655)..(1263)
228 <223> OTHER INFORMATION: Origin of replication ori ColEI
230 <220> FEATURE:
231 <221> NAME/KEY: gene
232 <222> LOCATION: (1264)..(2603)
233 <223> OTHER INFORMATION: NPT III gene coding for neomycin
234     phosphotransferase and kanamycin resistance
236 <220> FEATURE:
237 <221> NAME/KEY: misc_feature
238 <222> LOCATION: (2604)..(4098)
239 <223> OTHER INFORMATION: TrfA locus from pRK2 coding for two proteins,
240     P285 and P382, enabling the increase in the rate
241     of replication
243 <220> FEATURE:
244 <221> NAME/KEY: misc_feature
245 <222> LOCATION: (4106)..(4271)
246 <223> OTHER INFORMATION: T-DNA left border
248 <220> FEATURE:
249 <221> NAME/KEY: terminator
250 <222> LOCATION: (4272)..(4559)
251 <223> OTHER INFORMATION: Nopaline synthetase terminator
253 <220> FEATURE:
254 <221> NAME/KEY: gene
255 <222> LOCATION: (4560)..(5556)
256 <223> OTHER INFORMATION: NPT II gene coding for neomycin phosphotransferase
257     and kanamycin resistance
259 <220> FEATURE:
260 <221> NAME/KEY: promoter
261 <222> LOCATION: (5557)..(5770)
262 <223> OTHER INFORMATION: Nopaline synthetase promoter
264 <220> FEATURE:
265 <221> NAME/KEY: misc_feature
266 <222> LOCATION: (5791)..(5964)
267 <223> OTHER INFORMATION: T-DNA right border
269 <220> FEATURE:
270 <221> NAME/KEY: misc_feature
271 <222> LOCATION: (5770)..(5791)
272 <223> OTHER INFORMATION: MCS multiple cloning site
274 <400> SEQUENCE: 3
275 ccgggctggt tgccctcgcc gctgggctgg cggccgtcta tggccctgca aacgcgccag 60
276 aaacgcgcgtc gaagccgtgt gcgagacacc gcggccgccg gcgttggtga tacctgcgcg 120
277 aaaacttggc cctcactgac agatgagggg cggacgttga cacttgaggg gccgactcac 180
278 ccggcgccgc gttgacagat gaggggcagg ctcgatttcg gccggcgacg tggagctggc 240

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/845,064

DATE: 05/11/2001

TIME: 15:30:52

Input Set : A:\Mjf0410.txt

Output Set: N:\CRF3\05112001\I845064.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:5935 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:1
L:5937 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:57
L:5937 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:1
L:5938 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:57
L:5938 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:1
L:5940 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:57
L:5940 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:1